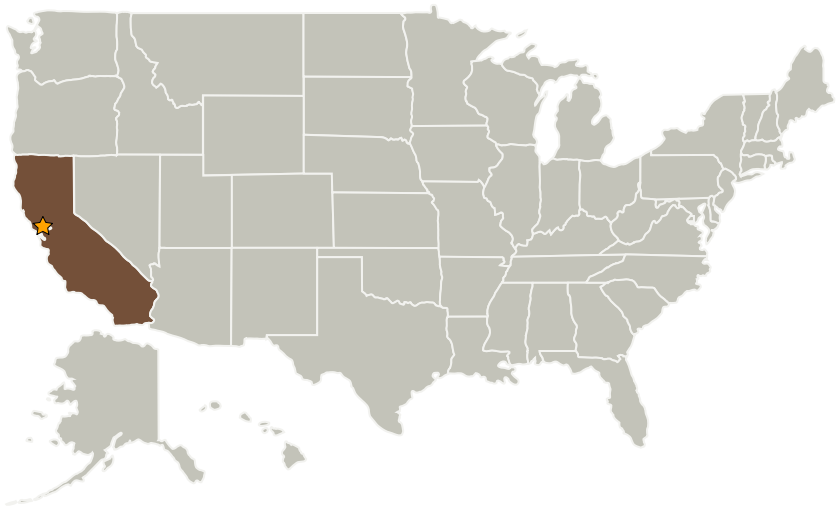
Adaptive Structural Mode Control, Phase I

Completed Technology Project (2008 - 2008)

Project Introduction

M4 Engineering proposes the development of an adaptive structural mode control system. The adaptive control system will begin from a "baseline" dynamic model of the system, which will be updated as the system is operated. This allows the control inputs to be tailored to the observed behavior of the system across a range of flight conditions, weight conditions, and failure conditions, while accounting for uncertainty in structural dynamics and aerodynamics. The development of the adaptive control system involves a selection of a set of adaptive control algorithms, which will then be implemented and tested on a set of example problems. The performance of the algorithms will be evaluated and additional development and enhancements will be subsequently recommended.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
M4 Engineering, Inc.	Supporting Organization	Industry Women-Owned Small Business (WOSB)	Long Beach, California

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations
California

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Myles D Baker

Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.3 Power Management and Distribution
    - TX03.3.1 Management and Control